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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,156	03/23/2006	Christopher Raymond Jones	05625/MJC	1059

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EXAMINER	
ANTHONY, JOSEPH DAVID	

ART UNIT	PAPER NUMBER
1796	

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03/20/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/550,156	JONES ET AL.	
	Examiner	Art Unit	
	Joseph D. Anthony	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5-11,13-16,18,19 and 22-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-11,13-16,18,19 and 22-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/20/05 and 4/24/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17, 19, and 22-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Said claims are deemed to be indefinite because the claimed concentration ratio ranges are listed without any concentration units, such as by weight or by volume.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 5-11, 19, and 22-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Cunningham et al. U.S. Patent Number 3,892,845.

Cunningham et al. teach a method and composition of adjusting the color in keratinous fibers, such as wool, hair, fur and the like, comprising subjecting the fibers to a composition containing a combination of dye reducing agents and keratin reducing agents to produce the desired color shade. A high degree of color stability is achieved without the use of a peroxide or ammonia compound when a keratin disulfide reducing agent and an oxidative dye reducing agent are used in combination on dyed keratinous material. Applicant's claims are deemed to be anticipated over Examples I and VIII wherein compositions are that that comprise in part: **5 parts thioglycollic acid, 5 parts tetrakis(hydromethyl)phosphonium chloride (i.e. a THP+ salt)**, said compositions are subsequently mixed with **aqueous shampoo compositions**.

Claims 1-2, 5-6, 8, 11, 19 and 22-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Hashizume et al. U.S. Patent Number 3,930,079.

Hashizume et al. teach a method for fire-proofing treatment of a fabric composed of polyester and cellulosic filaments of fibers, which comprises impregnating said fabric with the following treating agents: **(1) a tetrakis-hydroxymethyl phosphonium compound**, (2) methylolmelamine, **(3) a specific thiocarbamic acid derivative**, (4) a specific organic halogenated phosphorus compound and (5) a specific long-chain alkylethyleneurea, the amounts of the treating agents (1), (2), (3), (4) and (5), when designated a, b, c, d and e respectively, being as follows based on the total weight of a

to e; a = 40 to 80 percent, b = 10 to 50 percent, c = 5 to 25 percent, d = 3 to 10 percent, e = 1 to 5 percent . All said done to satisfy the listed equation., see abstract and column 3, lines 44-51.

Applicant's claims are deemed to be anticipated over Examples 1-11 wherein compositions are that that comprise in part: **25 parts by weight THPC (80% aqueous solution), 5 part by weight thiourea and surfactants**.

Claims 1-2 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Davis et al. U.S. Patent Number 4,673,509.

Davis et al. teach that the growth of microbiological contaminants in industrial cooling and process waters (e.g. chemical plants for paper making, or injection water for oil fields, see column 3, lines 32-48) and in aqueous based products, susceptible to microbiological spoilage on storage, is inhibited by the presence of a phosphorus compound having a hydroxy alkyl group directly attached to the phosphorus atom, such as **tetrakis hydroxy methyl phosphonium sulphate (i.e. THPS)**, see abstract, column 2, lines 48-55 and Example 7. The concentration of said phosphorous compound can broadly be from 1-5000 parts by weight of phosphorous compound per million parts by weight of water, see column 2, lines 56-68. Additional adjuvents can be added such as various types of surfactants, **mercapto benztriazoles** as an example of an additional scale or corrosion inhibitor and/or **isothiazolones** as an example of an additional biocide, see column 3, lines 4-22 and Example 1.

Applicant's claims are deemed to be anticipated over Examples 2-4 wherein a **small excess of sodium thiosulfate** is first added to water to dechlorinate the water followed the subsequent addition of various concentrations of **THPS.** This results in an aqueous composition that comprises **sodium thiosulfate and THPS.**

Claims 6, 8, 11, 13-19, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al. U.S. Patent Number 4,673,509.

Davis et al. differs from applicant's claimed invention in the following ways: 1) there is no direct teaching (i.e. by way of an example) to the combination of a THP+ salt with an organic thio-substituted compound as set forth in claims 6 and 22-25, 2) there is no direct teaching (i.e. by way of an example) to the combination of a THP+ salt, a thio-substituted compound and a surfactant, 3) it is unclear of said Examples 2-4 teach compositions that read on applicant's claimed THP+ salt to thio-substituted compound ratio range, and 4) there does not seem to be a direct teaching (i.e. by way of an example) to applicant's formulation where a reaction product of a THP+ salt and a thio-substituted compound is made, as claimed in applicant's claim 17.

It would have been obvious to one having ordinary skill in the art to use the broad disclosure of the reference as strong motivation to make a composition that actually comprised a THP+ salt with an organic thio-substituted compound since organic thio-substituted compounds, such as **mercapto benztriazoles** and/or **isothiazolones** are directly suggested by the reference as effective additional adjuvents, see column 3, lines 4-22. Likewise, the addition of applicant's various types of surfactants to such

compositions is also obvious since surfactants are taught in many of the references' examples, such as examples 7-8. Furthermore, it would have been obvious to make compositions that fall within applicant's claimed concentration range of THP+ salts to thio-substituted compound because: 1) Davis et al. disclose a broad concentration range of phosphorous compounds (e.g. THP+ salts) from 1-5000 parts by weight of phosphorous compound per million parts by weight of water, see column 2, lines 56-68, and 2) Davis et al teaches in Example 1 that **isothiazolone** can be used as an effective biocide within a concentration range from 20 to 50 parts by million. As way of illustration, if the concentration of the THP+ salt in an aqueous composition was set to be 2500 parts by million (which is well within the broad range of 1 to 5000 ppm) and the concentration of isothiazolone was 30 ppm, the calculated ratio of THP+ salt to isothiazolone would be about 83:1. Finally, it would have been obvious to one having ordinary skill in the art use Davis et al's disclosure of column 1, lines 67 to column 2, line 20 and/or claim 9, as strong motivation to actually react a THP+ salt with a thiourea.

Claims 1-2, 5-6, 8-11, 13-19 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fidoe et al. WO 02/08127 A1.

Fidoe et al. teach treating a water system containing or in contact with a metal sulphide scale to inhibit, prevent, reduce, dissolve or disperse iron sulphide deposits. A solution of tris(hydroxyorgano)phosphines (THP) and **tetrakis(hydroxyorgano)phosphonium salts (THP+ salts**) and sufficient of a chelant (amino-carboxylates or amino-phosphonates) to provide a solution containing **from 0.1**

to 50% by weight of said THP or THP+ salt and from 0.1 to 50% by weight of said chelant, is contacted with the metal sulphide scale thereby to dissolve at least part of said scale in said solution. Fidoe et al discloses that additional adjuvents can be added such as various types of **surfactants (cationic, anionic, non-ionic and/or amphoteric**), **mercapto benztriazoles** as an example of a additional scale or corrosion inhibitor and/or **isothiazolones** as an example of a additional biocide, see page 14, lines 19-31. Some of the taught water systems wherein the taught compositions can be used are the oil industry, the paper making industry etc., see page 1, lines 6-20.

Fidoe et al. differs from applicant's claimed invention in the following ways: 1) there is no direct teaching (i.e. by way of an example) to the combination of a THP+ salt with an organic thio-substituted compound, 2) there is no direct teaching (i.e. by way of an example) to the combination of a THP+ salt, an organic thio-substituted compound and a surfactant, and 3) there does not seem to be a direct teaching (i.e. by way of an example) to applicant's formulation where a reaction product of a THP+ salt and a thio-substituted compound is made, as claimed in applicant's claim 17.

It would have been obvious to one having ordinary skill in the art to use the broad disclosure of the reference as strong motivation to make a composition that actually comprised a THP+ salt with an organic thio-substituted compound since organic thio-substituted compounds, such as **mercapto benztriazoles** and/or **isothiazolones** are directly suggested by the reference as effective additional adjuvents. To make a composition wherein the concentration ratio of THP+ salts to thio-substuted compound falls within applicant's claimed range is also deemed to be obvious since such a

concentration ratio is deemed to be well within the broad disclosure of the reference. Likewise, the addition of applicant's various types of surfactants to such compositions is also obvious since all said surfactants are disclosed by the reference. Finally, it would have been obvious to one having ordinary skill in the art use Fidoe et al's disclosure on page 3, lines 15-20, as strong motivation to actually react a THP+ salt with a thiourea.

Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al. U.S. Patent Number 4,673,509 in view of Fidoe et al. WO 02/08127 A1.

Davis et al and Fidoe et al. have both been described above. Davis et al differs from applicant's claimed invention in that there does not seem to be a direct disclosure to the optional surfactant can be selected to be a cationic surfactant.

It would have been obvious to one having ordinary skill in the art to use Fidoe et al's disclosure to the use of cationic surfactants, see page 11, line 26 to page 13, line 9, as effective surfactants to be used in combination with THP+ salt containing compositions, for the treatment of aqueous systems containing metal sulfide scale deposits, as strong motivation to actually use cationic surfactants in Davis et al's compositions.

Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fidoe et al. WO 02/08127 A1 in view of Davis et al. U.S. Patent Number 4,673,509.

Fidoe et al. and Davis et al. have both been described above. Fidoe et al differs from applicant's claimed invention in that there does not seem to be a direct disclosure

to making compositions that fall within applicant's claimed THP+ salt to thio-substituted compound concentration ratio range.

It would have been obvious to make Fidoe et al's compositions to fall within applicant's claimed concentration range of THP+ salts to thio-substituted compound because: 1) Davis et al. disclose a broad concentration range of phosphorous compounds (e.g. THP+ salts) from 1-5000 parts by weight of phosphorous compound per million parts by weight of water, see column 2, lines 56-68, and 2) Davis et al teaches in Example 1 that **isothiazolone** can be used as an effective biocide within a concentration range from 20 to 50 parts by million. As such and as way of illustration, if the concentration of the THP+ salt in an aqueous composition was set to be 2500 parts by million (which is well within the broad range of 1 to 5000 ppm) and the concentration of isothiazolone was 30 ppm, the calculated ratio of THP+ salt to isothiazolone would be about 83:1. Since both Fidoe et al. and Davis et al. are drawn to the same compositions that use the same components, the use of Davis et al's disclosure would motivate one reading Fidoe et al. to make a composition that would thus read on applicant's claimed concentration ratio.

Prior-Art Cited But Not Applied

Any prior-art reference which is cited on FORM PTO-892 but not applied, is cited only to show the general state of the prior-art at the time of applicant's invention.

Examiner Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Joseph D. Anthony whose telephone number is (571) 272-1117. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571) 272-1498. The centralized FAX machine number is (571) 273-8300. All other papers received by FAX will be treated as Official communications and cannot be immediately handled by the Examiner.

/Joseph D. Anthony/
Primary Patent Examiner
Art Unit 1796
3/14/09